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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,190	08/28/2001	Kuniyuki Miura	325772024500	3526

25227 7590 08/31/2007

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EXAMINER	
HA, NGUYEN Q	

ART UNIT	PAPER NUMBER
2854	

MAIL DATE	DELIVERY MODE
08/31/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/940,190	MIURA ET AL.	
	Examiner	Art Unit	
	'Wynn' Q. HA	2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 June 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) *2,3,7,9,10,14,21,22 and 26* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-6,8,11-13,15-20 and 23-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 December 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 6, 8, 13, 15-20 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa et al. (US 5,475,481) in view of Wassermann (US 3,259,288).

Claim 1: Nishikawa teaches a continuous paper feeding apparatus for feeding a perforated continuous paper sheet to an image forming device 26 (Fig. 1), comprising:

a paper supply device configured to supply the continuous paper sheet P (Col. 3 line 8-9 " a fan-fold continuous sheet P");

a tractor 34 configured to feed the continuous paper sheet supplied from said paper supply device while engaging perforations of the continuous paper sheet P (Col. 3 line 41 "The tractor unit 34 serves as a feeding means, and feeds the fan-fold sheet P"; col. 3 line 66 – col. 4 line 5 "The tractor unit 34 has a pair of belts 34a. Each of the tractor belts 34a is an endless belt wound around a pair of feed rollers 34b and 34c. On each belt 34a, a plurality of protrusions, which engage with feed holes formed on each side of the fan-fold sheet P..."); and

a pair of rollers 50, 52 provided at a location downstream of said image forming device 26 to feed the continuous paper sheet P so that a feeding speed of the pair of rollers 50, 52 is slightly higher than that of the tractor 34 (Col. 8 lines 19-23 "The surface speed of the heat roller 50 is slightly faster than the feeding speed of the tractor unit 34. This will ensure that the sheet is fed under a slight tension, and thus, prevent buckling.")

Nishikawa does not teach a braking device located between said paper supply device and said tractor 34 and configured to apply a braking force to the continuous paper sheet P; a braking force setting device for variably setting the braking force; and a controller to control the variable braking force applied by the braking device according to the setting made by said braking force setting.

Wassermann teaches, as discussed in the Office Action of 8 March 2007, a continuous paper feeding apparatus (fig. 1) for feeding a perforated continuous paper sheet 1 to an image forming device 17, comprising a paper supply device configured to supply the continuous paper sheet 1; a tractor 2 configured to feed the continuous paper sheet supplied from said paper supply device while engaging perforations of the continuous paper sheet 1;

a braking device 19 located between said paper supply device and said tractor 2 and configured to apply a braking force to the continuous paper sheet 1 (Col. 2 lines 44-46 "Auxiliary tensioning is provided by means of a vacuum drawn in chamber 19 extending at least across the width of the paper 1");

a braking force setting device 29 for variably setting the braking force (Col. 2 lines 48-56 "The degree of tensioning provided by the vacuum drawn against the paper

1 may be controlled by varying the degree of vacuum in chamber 19. One simple manner of controlling the degree of the vacuum is to control the speed of the motor 21 as by means of a variable auto-transformer 28 having a movable tap 29"); and

a controller to control the variable braking force applied by the braking device 19 according to the setting made by said braking force setting (Col. 1 lines 69-70 "Tensioning can be easily and accurately controlled." Note: Although Wassermann does not expressly disclose "a controller," it is considered to be an inherent part of the paper feeding apparatus in order to control the variable braking force, i.e. to control the degree of vacuum in chamber 19, so that "tensioning [of the paper 1] can be easily and accurately controlled [col. 1 line 69-70]" by the continuous paper feeding apparatus "for handling paper in high speed printers [col. 1 line 71- col.2 line 3]").

Wassermann's braking device 19 is to avoid "problems connected with paper feeding include handling paper of various widths, handling paper of various thickness, properly tensioning the paper, starting and stopping the paper motion jitter or tearing, etc. (col. 1 line 30-34), or to avoid problems such as "the paper is easily torn at the sprocket holes if the tracking of the follower sprockets is not substantially perfect (col. 1 lines 56-57)."

It would have been obvious to one of ordinary skill in the art at the time the present invention was made to provide Nishikawa's continuous paper feeding apparatus with Wassermann's paper braking device to be located between the paper supply device and the tractor 34 and configured to apply a braking force to the continuous paper sheet P, in order to avoid problems connected with paper feeding, including

handling paper of various widths, handling paper of various thickness, properly tensioning the paper, starting and stopping the paper motion jitter or tearing, etc., or to avoid problems such as the paper is easily torn at the sprocket holes if the tracking of the follower sprockets is not substantially perfect, as taught by Wassermann.

Claim 6: Nishikawa, as modified, teaches a continuous paper feeding apparatus according to claim 1, wherein said braking device includes an evacuating device 19 to evacuate the continuous paper sheet 1 thicknesswise (Wassermann Fig. 1 shows the evacuating device 19 evacuates the paper 1 thicknesswise).

Claim 8: Nishikawa, as modified, teaches a printer 10 (Nishikawa) for printing an image onto a perforated continuous paper sheet P, comprising a printing device 26 and all the elements being claimed (See discussion in claim 1).

Claim 13: Nishikawa, as modified, teaches a printer according to claim 8, wherein said braking device includes an evacuating device for evacuating the continuous paper sheet thicknesswise (See claim 6).

Claim 15: Nishikawa, as modified, teaches a printer according to claim 8, further comprising a fixing device 36 (Nishikawa) configured to fix the image onto the continuous paper sheet at a location downstream of said printing device 26 (Col. 3 lines

63-65 "The toner image transferred to the fan-fold sheet P is fixed by the fixing unit 36...").

Claim 16: Nishikawa, as modified, teaches a printer according to claim 15, wherein said fixing 36 (comprising a heat roller 50) device applies tension to the continuous paper sheet P (Col. 8 lines 19-23 "The surface speed of the heat roller 50 is slightly faster than the feeding speed of the tractor unit 34. This will ensure that the sheet P is fed under a slight tension...").

Claim 17: Nishikawa, as modified, teaches a continuous paper feeding apparatus used with an image forming device 26, comprising all the elements being claimed (See discussion in claim 1).

Claim 18: Nishikawa, as modified, teaches a continuous paper feeding apparatus according to claim 17, wherein said braking device is located upstream of said feeding device 34 (See discussion in claim 1).

Claim 19: Nishikawa, as modified, teaches a continuous paper feeding apparatus according to claim 17, further comprising a printing device 26 (Nishikawa) configured to print the image onto the continuous printing paper sheet P fed by said feeding device 34 at a location downstream of said feeding device 34.

Claim 20: Nishikawa, as modified, teaches a continuous paper feeding apparatus according to claim 17, said feeding device includes a tractor having feed pins for engaging perforations of the printing paper sheet P (See discussion in claim 1).

Claim 25: Nishikawa, as modified, teaches a continuous paper feeding apparatus according to claim 17, wherein said braking device includes an evacuating device 19 (Wassermann) to evacuate the printing paper sheet thicknesswise (See discussion in claim 6).

2. **Claims 4, 11, and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa in view of Wassermann, and further in view of Nishimura et al. (US 5,018,888).

Nishikawa in view of Wassermann teaches a continuous paper feeding apparatus according to claims 1, 8 and 17, including a braking force setting device that sets a braking force to the continuous paper sheet (as discussed in claims 1, 8 and 17).

Nishikawa in view of Wassermann does not teach said braking force being set according to a type of the continuous paper sheet.

Nishimura teaches, as discussed in the Office Action of 8 March 2007, a continuous paper feeding apparatus including a tractor 31R & 31L configured to feed a continuous paper sheet 7 while engaging perforations of the sheet (fig. 4); and a breaking force setting device 48 for adjusting tensions (braking force) of the paper sheet. Nishimura further teaches that because of different paper types the amount of

deformation of the perforation holes may vary during the feeding, therefore said braking force setting device 48 sets the breaking force according to a type of the continuous paper sheet (Abstract "the desired tension is determined from paper thickness"; col. 1 lines 46-49 "The amount of the feeding apertures depends on the rigidity of the paper..."), in order to avoid sheet feeding problems, such as jams, if the perforations were broken (col. 1 line 16-32).

It would have been obvious for a person of ordinary skill in the art at the time the invention was made to have Wassermann braking force set according to a type of the continuous paper sheet, as taught by Nishimura, in order to avoid sheet feeding problems, such as jams, if the perforations were broken.

3. **Claims 5, 12, and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa in view of Wassermann, and further in view of Ara Yoji (JP 61-094955 A).

Nishikawa in view of Wassermann teaches a continuous paper feeding apparatus according to claims 1, 8 and 17, including a braking force setting device that sets the braking force to the continuous paper sheet (as discussed in claims 1, 8 and 17).

Nishikawa in view of Wassermann does not teach said braking force being set according to conditions of an installation environment.

Yoji teaches, as discussed in the Office Action of 8 March 2007, a continuous paper feeding apparatus including a tractor 12 configured to feed a continuous paper

sheet 14 while engaging perforations of the sheet (fig. 4). Yoji further teaches that the installation environment such as temperature, humidity, etc., affects the feeding of the sheet, therefore said braking force should be varied (i.e. increased or decreased) according to the installation environment, in order to feed the sheet properly at anytime irrespectively of the installation environment (See Abstract).

It would have been obvious for a person of ordinary skill in the art at the time the invention was made to have Wassermann braking force set according to conditions of an installation environment, as taught by Yoji, in order to feed the sheet properly at anytime irrespectively of the installation environment.

4. **Claims 1, 6, 8, 13, 15-20 and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa in view of Puritscher et al. (US 6,370,351 B1).

Claim 1: As discussed in paragraph 1 above, Nishikawa teaches all that is claimed except a braking device located between said paper supply device and said tractor and configured to apply a braking force to the continuous paper sheet; a braking force setting device for variably setting the braking force; and a controller to control the variable braking force applied by the braking device according to the setting made by said braking force setting.

Puritscher teaches a continuous paper feeding apparatus 1 (Fig. 1) for feeding a perforated continuous paper sheet 6 to an image forming device 5, comprising:

a paper supply device 7 configured to supply the continuous paper sheet 6;

a tractor 60 (Figs. 5, 10, 11; col. 7 line 35 "a pin feed wheel 60") configured to feed the continuous paper sheet 6 supplied from said paper supply device 7 while engaging perforations of the continuous paper sheet 6 (Col. 7 lines 47-55 "paper 6 comprises margin perforations...the margin perforation is brought into engagement with the pin wire 60");

a braking device 13 (Fig. 1) located between said paper supply device 7 and said tractor 60 and configured to apply a braking force to the continuous paper sheet 6 (Col. 4 lines 17-18 "the paper web 6 passes through a paper brake 13");

a braking force setting device 15 for variably setting the braking force (Col. 4 lines 35-38 "The loop-drawing means 15 and the under-pressure brake 13 form a regulating system that produces a constant tension of the paper web 6 from the under-pressure brake 13"); and

a controller to control the variable braking force applied by the braking device 13 according to the setting made by said braking force setting (Col. 1 lines 44-46 "The under-pressure in the brake 13 is then set such that the roller positions deviate as little as possible from a rated, or target, position." Note: Although Puritscher does not expressly disclose "a controller," it is considered to be an inherent part of the paper feeding apparatus in order to set [or control] the under-pressure in the brake 13).

Puritscher's braking device 13 is to generate a tension in the paper web 6 (col. 4 lines 21-22 "A tension is generated in the paper web due to this braking") thus to help stabilize the paper web 6 (Col. 5 lines 40-44 "a great stabilization of the paper web 6").

It would have been obvious to one of ordinary skill in the art at the time the present invention was made to provide Nishikawa's continuous paper feeding apparatus with Puritscher's paper braking device to be located between the paper supply device and the tractor and configured to apply a braking force to the continuous paper sheet, as taught by Puritscher, in order to generate a tension in the paper web thus to help stabilize the paper web.

Claim 6: Nishikawa, as modified, teaches a continuous paper feeding apparatus according to claim 1, wherein said braking device includes an evacuating device 13 (Puritscher) to evacuate the continuous paper sheet 1 thicknesswise (Puritscher col. 4 lines 17-23 "The braking effect thereof is based on an under-pressure with which the paper web 6 is drawn against an under-pressure chamber [of the paper brake 13]"; Puritscher's Fig. 1 shows the evacuating device 13 evacuates the paper 1 thicknesswise).

Claim 8: Nishikawa, as modified, teaches a printer 10 for printing an image onto a perforated continuous paper sheet P, comprising a printing device 26 and all the elements being claimed (See discussion in claim 1).

Claim 13: Nishikawa, as modified, teaches a printer according to claim 8, wherein said braking device includes an evacuating device for evacuating the continuous paper sheet thicknesswise (See claim 6).

Claim 15: Nishikawa, as modified, teaches a printer according to claim 8, further comprising a fixing device 36 (Nishikawa) configured to fix the image onto the continuous paper sheet at a location downstream of said printing device 26 (Col. 3 lines 63-65 "The toner image transferred to the fan-fold sheet P is fixed by the fixing unit 36...").

Claim 16: Nishikawa, as modified, teaches a printer according to claim 15, wherein said fixing 36 device (comprising a heat roller 50) applies tension to the continuous paper sheet P (Col. 8 lines 19-23 "The surface speed of the heat roller 50 is slightly faster than the feeding speed of the tractor unit 34. This will ensure that the sheet P is fed under a slight tension...").

Claim 17: Nishikawa, as modified, teaches a continuous paper feeding apparatus used with an image forming device 26, comprising all the elements being claimed (See discussion in claim 1).

Claim 18: Nishikawa, as modified, teaches a continuous paper feeding apparatus according to claim 17, wherein said braking device is located upstream of said feeding device 34 (See discussion in claim 1).

Claim 19: Nishikawa, as modified, teaches a continuous paper feeding apparatus according to claim 17, further comprising a printing device 26 (Nishikawa) configured to print the image onto the continuous printing paper sheet P fed by said feeding device 34 at a location downstream of said feeding device 34.

Claim 20: Nishikawa, as modified, teaches a continuous paper feeding apparatus according to claim 17, said feeding device includes a tractor having feed pins for engaging perforations of the printing paper sheet P (See discussion in claim 1).

Claim 25: Nishikawa, as modified, teaches a continuous paper feeding apparatus according to claim 17, wherein said braking device includes an evacuating device 13 (Puritscher) to evacuate the printing paper sheet thicknesswise (See discussion in claim 6).

5. **Claims 4, 11, and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa in view of Puritscher, and further in view of Nishimura.

Nishikawa in view of Puritscher teaches all that is claimed except for the braking force being set according to a type of the continuous paper sheet.

Nishimura teaches, as discussed above, the braking force being set according to a type of the continuous paper sheet in order to avoid sheet feeding problems, such as jams, if the perforations were broken (col. 1 line 16-32).

It would have been obvious for a person of ordinary skill in the art at the time the invention was made to have Puritscher's braking force set according to a type of the continuous paper sheet, as taught by Nishimura, in order to avoid sheet feeding problems, such as jams, if the perforations were broken.

6. **Claims 5, 12, and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa in view of Puritscher, and further in view of Ara Yoji.

Nishikawa in view of Puritscher teaches all that is claimed except for the braking force being set according to conditions of an installation environment.

Yoji teaches, as discussed above, the braking force being set according to conditions of an installation environment, in order to feed the sheet properly at anytime irrespectively of the installation environment (See Abstract).

It would have been obvious for a person of ordinary skill in the art at the time the invention was made to have Puritscher's braking force set according to conditions of an installation environment, as taught by Yoji, in order to feed the sheet properly at anytime irrespectively of the installation environment.

Response to Arguments

7. Applicant's arguments with respect to claims 1, 8 and 17 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed on 7 June 2007 have also been fully considered but they are not persuasive with respect to the claimed elements "a braking force setting

device" and "a controller to control the braking force." Applicant argues: "Wassermann does not disclose adjusting the braking force of the moving tap 29 when the feeding force is unstable, such that the tension applied to the printing paper sheet is constant and feeding is subsequently stabilized. Thus, Wassermann does not anticipate claim 1." However, in contrary, as Wassermann discloses in col. 2 line 44-56, "The degree of tensioning provided by the vacuum drawn against the paper 1 may be controlled by varying the degree of vacuum in chamber 19. One simple manner of controlling the degree of vacuum is to control the speed of the motor 21 by means of a variable auto-transformer 28 having a movable tap 29." That is, the adjusting or control of the vacuum braking force is by means of the moving tap 29. And, as discussed in claim 1 above, although Wassermann does not expressly disclose "a controller," it is considered to be an inherent part of the paper feeding apparatus in order to control the variable vacuum braking force so that tensioning [of the paper 1] can be easily and accurately controlled by the continuous paper feeding apparatus for handling paper in high speed printers.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to 'Wynn' Q. HA whose telephone number is 571-272-2863. The examiner can normally be reached on Monday - Friday, from 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov.

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August 29, 2007
NQH

/Daniel J. Colilla/
Primary Examiner
Art Unit 2854